

# Sugar Cane Burning on Maui

---

Prepared by the Department of Health, Clean Air Branch  
April 9, 2013

The Department of Health, Clean Air Branch regulates and monitors air pollution in Hawaii.

Under state and federal law, the Branch:

- Reviews and approves air and agricultural burning permits
- Evaluates and enforces state and federal air standards
- Conducts inspections, and investigates reported incidents related to outdoor air quality, and
- Ensures companies comply with state and federal emission standards to minimize air pollution

## **Open Burning**

An open, outdoor fire or "open burning" emits pollutants directly into the air and includes agricultural, residential, and prescribed burning. Open burning is generally prohibited except for activities such as cooking, fire training, and agricultural burning with a valid permit. Other types of open burning require approval from the department. The rules regulating open burning are Hawaii Administrative Rules (HAR) Section 11-60.1 Subchapter 3.

## **Agricultural Burning**

The Department regulates agricultural burning activities in the State through the Agricultural Burning Permit (AGP) program. To burn green waste generated from agricultural operations, businesses must obtain an AGP. The AGP includes permit conditions such as:

- Notification requirements
- Location where burning is allowed
- Time when the burning may occur
- Limitations of what materials can be burned
- Measures to minimize visible smoke impacts to schools, highways, airports, and other sensitive areas

Agricultural burning may be further restricted by government agencies in times of drought, fire hazards or a "No-Burn Period."

## **No-Burn Periods**

A "no-burn" period is declared when visible haze and meteorological conditions exist which prevent air pollutants from being readily dispersed. The state rule, HAR §11-60.1-55 (1) states that a no-burn period shall be called, "When the director determines that meteorological conditions have resulted in widespread haze on any island or in any district on the island and that these meteorological conditions will continue or deteriorate."

## **Sugar Cane Burning**

The practice of agricultural burning is widely used in Hawaii as well as other states such as California, Florida and Louisiana. Sugar cane and pineapple fields have been burned in the past on all Hawaiian Islands for many years. Sugar cane fields are burnt prior to harvesting to remove excess leaves and to reduce the volume of material to be transported and processed by the mill. However, cane burning causes smoke, ash, and gaseous air pollutants. Residents have complained about the large plumes of smoke and ash on their properties. Residents may also be concerned that exposure to sugar cane smoke could cause health effects. Some advocate that agricultural burning be banned in Hawaii.

### **National Ambient Air Quality Standards**

The federal Clean Air Act established the National Ambient Air Quality Standards (NAAQS) for a number of air pollutants. The standards are set, and regularly updated by the U.S. Environmental Protection Agency (EPA). These standards represent thresholds at or below which no adverse public health impacts are expected. The NAAQS have two categories of standards:

- Primary standards: are limits, with a margin of safety, to protect public health, including the health of sensitive populations such as children, the elderly, and people with respiratory disease.
- Secondary standards: are limits to protect public welfare, including protection against visibility impairment, damage to animals, crops, vegetation, and buildings.

With regard to agricultural burning, the two relevant pollutants are Particulate Matter with an aerodynamic diameter of 10 microns or less (PM<sub>10</sub>) and 2.5 microns or less (PM<sub>2.5</sub>).

### **Ambient Air Quality Monitoring**

Air monitoring is the most objective means for measuring levels of air pollutants. Currently, the DOH operates the Kihei ambient air quality monitoring station located downwind of sugar fields. The primary purpose of the station is to monitor cane burning. It measures levels of the pollutants PM<sub>10</sub> and PM<sub>2.5</sub>.

The DOH has been monitoring air quality in Maui from 1971 to the present. The air quality in Maui continues to meet the National Ambient Air Quality Standards. The most recent results from the monitoring stations at Kihei and Paia are attached below. These graphs show the single highest 24-Hour Average reading in each month compared to the Primary Standard for the 24-Hour Average. No violations of the NAAQS were found to occur. In July 2005, one exceedance of the 24-Hour Average NAAQS was caused by agricultural dust and in June 2007, another was caused by a brush fire. No other exceedance was recorded in any other month.

Monitoring stations cannot be located everywhere. Establishing and operating a monitoring station is expensive. Over the past four decades, the DOH-CAB has operated stations that monitor particulates in eight different locations on Maui.

Monitoring data from all the monitoring stations statewide can be viewed at:

<http://health.hawaii.gov/cab/hawaii-ambient-air-quality-data/>

### **Public Complaints and Department Action**

The Department's Maui inspector investigates cane burning complaints. To obtain information or file a complaint:

- call the DOH Maui office at 984-8234, or
- call the Honolulu office at (808) 586-4200, or
- email your complaint to: CAB@doh.hawaii.gov.

Please provide the date, time, and location of the burning, the location you were exposed to visible smoke, and your contact information (name, address, phone number, or email). Appropriate enforcement actions will be taken if violations are identified and substantiated.

The Department of Health is committed to maintain Hawaii's air quality. We continue to monitor agricultural burning activities and work to minimize smoke impacts to the public. To accomplish this, the DOH-CAB:

- **Installed an additional PM<sub>2.5</sub> monitoring station in Paia.**
- **Issued new agricultural burn permit requirements which provide more clarity and enforceability.**
- **Met with community representatives in February 2013 to hear their concerns on cane burning.**